

WHAT IS CLAIMED IS:

1. A method of producing resistant starch comprising:
 - (a) selecting a reaction temperature;
 - (b) acidifying unmodified starch to a pH, wherein said pH is optimum to convert said unmodified starch to resistant starch when at said reaction temperature;
 - (c) heating said acidified unmodified starch to about the reaction temperature; and
 - (d) maintaining said acidified unmodified starch close to about the reaction temperature until the maximum yield of resistant starch has been obtained while maintaining a whiteness level between about 50 and about 100.
2. The method of claim 1, wherein said unmodified starch of step (b) is acidified with chlorine gas or monochloroacetic acid.
3. The method of claim 1, wherein said unmodified starch of step (b) is acidified with aqueous hydrochloric acid.
4. The method of claim 1, wherein said unmodified starch of step (b) is acidified with gaseous hydrochloric acid.
5. The method of claim 1, wherein said optimal pH of the acidified unmodified starch of step (b) is between about 1 and about 4.
6. The method of claim 1, wherein said optimal pH of acidified unmodified starch of step (b) is between about 2 and about 3.

7. The method of claim 1, wherein said optimal pH of acidified unmodified starch of step (b) is about 2.4.

8. The method of claim 1, wherein said reaction temperature is between about 140°C and about 180°C.

9. The method of claim 1, wherein said reaction temperature is between about 160°C and about 175°C.

10. The method of claim 1, wherein said reaction temperature is about 170°C.

11. The method of claim 1, wherein said whiteness level is between about 60 and about 100.

12. The method of claim 1, wherein said whiteness level is between about 65 and about 100.

13. The method of claim 1, wherein the moisture content of the said unmodified starch is between about 2% and about 6%.

14. The method of claim 1, wherein the said unmodified starch is acidified before the moisture content is reduced to between about 2% and about 6%.

15. The method of claim 1, wherein said percentage yield of said resistant starch is greater than about 50%.

16. The method of claim 1, wherein said percentage yield of said resistant starch is greater than about 60%.

17. The method of claim 1, wherein:
 - said reaction temperature is between about 140°C and about 180°C;
 - said pH is between about 1 and about 4; and
 - said whiteness level is between about 65 and about 100.
18. The method of claim 1, wherein:
 - said reaction temperature is between about 160°C and about 175°C ;
 - said pH is between about 2 and about 3; and
 - said whiteness level is between about 65 and about 100.
19. The method of claim 1, wherein:
 - said reaction temperature is about 170°C;
 - said pH is about 2.4; and
 - said whiteness level is between about 65 and about 100.
20. The method of claim 1, wherein:
 - said starch has a moisture content of about 4% and is acidified with gaseous hydrochloric acid to a pH of about 2.4;
 - said reaction temperature is about 160°C; and
 - said whiteness level is between about 65 and about 100.
21. The method of claim 1, wherein the unmodified starch is derived from corn.
22. The method of claim 1, wherein the unmodified starch is derived from potatoes, rice, casava, or wheat.
23. The method of claim 1, further comprising:
 - (e) the manufacture of a food product from said resistant starch.

24. A method of producing resistant starch comprising:

(a) acidifying unmodified starch to a pH and a reaction temperature, wherein said pH is selected relative to said reaction temperature such that said pH may be optimum thereto to convert said unmodified starch to resistant starch when at said reaction temperature;

(b) heating said acidified unmodified starch to about the reaction temperature; and

(c) maintaining said acidified unmodified starch close to about the reaction temperature such that the maximum yield of resistant starch may be obtained while maintaining a whiteness level between about 50 and about 100.

25. The method of claim 24, wherein said pH of said unmodified starch of step (a) is optimum relative to said reaction temperature to convert said unmodified starch to resistant starch when at said reaction temperature.

26. The method of claim 24, wherein said maximum yield of resistant starch of step (c) is obtained while maintaining a whiteness level between about 50 and about 100.

27. A resistant starch formed from a process comprising:

(a) acidifying unmodified starch to a pH and a reaction temperature, wherein said pH is selected relative to said reaction temperature such that said pH may be optimum thereto to convert said unmodified starch to resistant starch when at said reaction temperature;

(b) heating said acidified unmodified starch to about the reaction temperature; and

(c) maintaining said acidified unmodified starch close to about the reaction temperature such that the maximum yield of resistant starch may be obtained while maintaining a whiteness level between about 50 and about 100.